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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/577,306	05/24/2000	Bastiaan Hendrik Bakker	F3238(C)	4727

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PATENT DEPARTMENT
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EXAMINER

SORKIN, DAVID L

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 07/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/577,306

Applicant(s)

BAKKER ET AL.

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-7, 13-16 and 20-23 is/are pending in the application.
- 4a) Of the above claim(s) 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 5-7, 15, 16 and 20-23 is/are rejected.
- 7) ☒ Claim(s) 15 and 16 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 16 June 2003 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The proposed drawing correction filed on 16 June 2003 have been approved. Corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Claim Objections

2. Applicant is advised that should claim 20 be found allowable, claim 7 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). While it is unclear what is being claimed in claims 20 and 7, as discussed below, to the extent understood, it is considered that they have the same scope.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 5-7, 15 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application

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was filed, had possession of the claimed invention. Applicant has amended independent claim 20 to recite "A single screw comprising..." as opposed to what was previously being claimed, -- A single screw *extruder* comprising... --. While it is unclear what is being claimed, as discussed below regarding the second paragraph of section 112, the originally filed specification fails to disclose a single screw comprising the listed elements. Particularly, the "barrel" and the "cooling means" are not disclosed as being elements of a screw, but instead these elements are disclosed as part of an apparatus, which also includes a screw.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 5-7, 15, 16 and 20-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. Regarding claims 5-7, 15 and 20, applicant has amended independent claim 20 to recite "A single screw comprising..." as opposed to what was previously being claimed, -- A single screw *extruder* comprising... --. It is unclear what is being claimed. Is only the screw being claimed or are elements other than the screw such as the barrel and cooling circuit required elements of the claims? There is lack of antecedent basis for "said single screw extruder" in claim 20. The preambles of dependent claims 5-7 and 15, "Extruder of claim 20", are unclear, because claim 20 no longer is to an extruder.

8. Regarding claims 5-7, 15, 16 and 20-23, each independent claim recites "having a pitch angle defined as $\text{Arctg}(\text{Sp}/\text{Pi}.\text{De})$ ". Applicant emphasized in paper No. 17 that the parameters of the formula are not necessarily constant. The scope of the formula is therefore unclear. For example, suppose one attempts to determine a $\text{Sp}/\text{Pi}.\text{De}$ value for a screw. When one measures the pitch length between two points a full turn apart as instructed by the specification to determine Sp, which of the potentially infinite values of De between the two points does one select for the denominator of the $\text{Sp}/\text{Pi}.\text{De}$ ratio? Likewise which flight's height (H) should be used to calculate H/wc , where wc is the spacing between two flights?

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. While it is unclear what is being claimed as discussed above with regard to section 112, the claims have been considered with regard to the prior art to the extent possible.

11. Claims 7, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauwendaal (US 4,798,473) in view of Zakic (US 4,541,792). Regarding claims 20 and 7, Rauwendaal ('473) discloses a single screw extruder (see col. 6, lines 15-23 and 51-53) comprising an extruding screw (10) and a barrel (33) characterized by plural thread starts (see col. 6, lines 19-21) and a pitch angle within the claimed range of 32-

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42 (see col. 5, lines 23-25, "20° to 40°" and Fig. 4 where specific values such as 35 degrees and 40 degrees are disclosed). It is considered that col. 6, lines 19-22, "This invention can be utilized in all extruder screws including multi-flighted extruder screws" would have suggested 3 or more flights to one of ordinary skill in the art. Rauwendaal ('473) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('473) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). Regarding the cooling liquid being ammonia, it has been held that "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining the patentability of the apparatus claim" *Ex parte Thilbault*, 164 USPQ 666 (Bd. App. 1969). Regarding claim 22, Rauwendaal ('473) discloses a single screw extruder (see col. 6, lines 15-23 and 51-53) comprising an extruding screw (10) and a barrel (33) characterized by between 2 and 6 thread starts (see col. 6, lines 19-21) and a pitch angle within the claimed range of 32-42 (see col. 5, lines 23-25, "20° to 40°" and Fig. 4 where specific values such as 35 degrees and 40 degrees are disclosed). Rauwendaal ('473) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('473) with a

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cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18).

12. Claims 5-7, 15, 16 and 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rauwendaal (US 5,932,159) in view of Zakic (US 4,541,792).

Regarding claims 20 and 7, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18) characterized by from 3 to 4 thread starts (see col. 7, lines 20-26). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990)). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). Regarding the cooling liquid being ammonia, it has been held that "Expressions relating the apparatus to contents

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thereof during an intended operation or of no significance in determining the patentability of the apparatus claim" *Ex parte Thilbault*, supra. Regarding claim 22, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18) characterized by between 2 and 6 thread starts (see col. 8, lines 6-10). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, 191 USPQ 90 (CCPA 1976); *In re Woodruff*, 16 USPQ2d 1934 (Fed. Cir. 1990)). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). Regarding claims 5 and 15, Rauwendaal ('159) discloses a length to diameter ratio which overlaps the claimed ranges (see col. 10, lines 60-65). Regarding claim 6, channel width and height are recognized a variable to be optimized according to equations provided (see col. 10, lines 1-16). It is considered that it would have been obvious to one of ordinary skill in the art to have optimized these variables according to the equations provided. As held in *In re Aller*, 105 USPQ

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233, "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

Regarding claims 21 and 23, Rauwendaal ('159) discloses a single screw extruder (see col. 7, lines 20-26) comprising an extruding screw (28) and a barrel (18). A pitch range (30-90 degrees) which overlaps the claimed range is disclosed (see col. 10, lines 60-64). In cases where claimed ranges "overlap or lie inside ranges disclosed by the prior art a *prima facie* case of obviousness exists" (*In re Wertheim*, supra.; *In re Woodruff*, supra.). It is further noted that according to the instant specification, the claimed range of 32-42 degrees is not critical, but merely "preferable". Rauwendaal ('159) also discloses a length to diameter ratio which overlaps the claimed ranges (see col. 10, lines 60-65). Rauwendaal ('159) does not disclose a cooling circuit. Zakic ('792) teaches providing a screw extruder with a cooling circuit (see col. 1, lines 5-20). It is considered that it would have been obvious to one of ordinary skill in the art to have provided the extruder of Rauwendaal ('159) with a cooling circuit because Zakic ('792) explains that "it is common to provide an extruder barrel with a jacket through which a heat transfer medium, usually water, is pumped" (col. 1, lines 12-15) and further explains that may be "hot or cold" (see col. 1, lines 16-18). Regarding claim 16, channel width and height are recognized a variable to be optimized according to equations provided (see col. 10, lines 1-16). It is considered that it would have been obvious to one of ordinary skill in the art to have optimized these variables according to the equations provided. As held in *In re Aller*, supra., "where the general conditions of a

claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation".

Response to Arguments

13. Applicant states, "The Office points to no teachings of the use of an extruder of the type recited herein for frozen confections". However, firstly, none of the instant claims even mention the intended use of extruding "frozen confections". Secondly, and perhaps more importantly, "the manner or method in which such a machine is to be utilized is not germane to the issue of patentability of the machine itself" *In re Casey* 152 USPQ 235 (CCPA 1967).

14. Applicant states, "it is unclear why the applicant should be denied the possibility of claiming the apparatus and a functional ingredient contained therein". The examiner believes an applicant may claim the combination of an apparatus and an ingredient contained therein; however, the examiner considers that (to the extent understood) only apparatus claims are being recited in the instant application. This issue is covered in MPEP 2115. MPEP 2115, explains that in apparatus claims ingredients contained therein are not limiting. However, MPEP 2115 also explains that if the invention is claimed as a "product" or "kit", decisions such as *Ex parte Thilbault*, supra. would not apply. Because the preambles of the instant claims are "A single screw extruder..." or "A single screw..." or "Extruder...", the examiner must consider that an apparatus (machine) is being claimed, as opposed to a product or kit. In summary, the examiner is not attempting to deny applicant the right to claim a combination of an apparatus and a material contained therein. Instead, the examiner considers that the only proper

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interpretation of the instant claims, based upon *Ex parte Thilbault*, supra. and the other decisions cited in MPEP 2115, is that the recitation of ammonia is not limiting, at least because an apparatus or machine, rather than a product or kit, is being claimed.

15. Furthermore, in the instant claims, "ammonia" is only referred to with regard to the function "is circulated". It is never stated that the claimed structure comprises ammonia. The claim is open to ammonia being a substance with which the claimed apparatus may be used in a particular operation.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

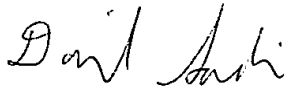
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

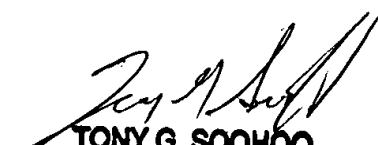
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David Sorkin

July 23, 2003



TONY G. SOOHOO
PRIMARY EXAMINER